

Section 1 - Identification of Chemical Product and Company

Envirogreen Pty Ltd
PO Box 6390
Silverwater NSW 1811

Phone: (02) 9395 1200 (Business hours)
Fax: (02) 9395 1241

Trade Name: Winter Grass Killer
Product Use: Selective herbicide for the control of winter grass (poa annua)
Creation Date: June 2003
Revision Date: June 2008

Section 2 - Hazards Identification

Statement of Hazardous Nature

Hazardous substance (although this product is not listed in the hazardous substances data base of ASCC)
Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R21, R25, R36/37/38. Harmful in contact with skin. Toxic if swallowed. Irritating to eyes, respiratory system and skin.

Safety Phrases: S20, S23, S44, S36/37/39. When using, do not eat or drink. Do not breathe vapour or spray. If you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). Wear suitable protective clothing, gloves and eye/face protection.

SUSDP Classification: S6

ADG Classification: 6.1 Toxic Substances Risk Phrases are:

Packing Group: III

UN Number: 2902

Hazchem Code: 2X

Emergency Overview

Physical Description & colour: Clear Light Brown Liquid

Odour: Faint solvent odour

Major Health Hazards: No major health hazards recorded for this product

Potential Health Effects

Inhalation: Data indicates that this product is irritating if inhaled. Will cause discomfort to throat and lungs and/or coughing which should disappear once exposure has ceased.

Skin Contact: Data suggests that this product may be absorbed through the skin and be harmful by skin absorption. Major skin exposure may lead to health problems. This product is irritating to skin. It is likely to cause discomfort and effects such as moderate to severe itchiness, blistering and skin reddening.

Eye Contact: This product is irritating to the eyes. It will cause discomfort such as stinging pain, watering and redness of the eyes. Effects may last after exposure has ceased, and in severe exposure, long lasting or even permanent effects such as corneal damage can occur.

Ingestion: Data suggests that this product is toxic if swallowed. Ingestion of small quantities may cause harm and larger quantities may lead to death.

Carcinogen Status:

ASCC: No significant ingredient is classified as carcinogenic by ASCC.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m3)	STEL (mg/m3)
Endothal (as the dipotassium salt)	2164-07-0	17.5	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Eyebaths or eyewash stations and safety deluge showers should be provided where this product is being used.

Inhalation: If vapours or mists are inhaled, and irritation or unusual symptoms have developed, remove to fresh air and observe until recovered. If irritation or symptoms persists more than about 30 minutes, seek medical advice.

Skin Contact: If product gets on skin, immediately remove contaminated clothing and wash skin with soap and water for at least 15 minutes. If irritation persists, seek medical attention.

Eye Contact: If this product comes into contact with eyes, hold open and wash with running water for at least 15 minutes. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. Seek medical attention.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and give a glass of water to drink. Seek medical attention.

Advice to Doctor: Note the nature of this product. No specific antidote known. Measures against circulatory shock, respiratory depression and convulsion may be needed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may form toxic and corrosive mixtures in confined spaces. Take appropriate protective measures.

Extinguishing Media: Not Combustible. Use extinguishing media suited to burning materials.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat, goggles and self contained breathing apparatus. All skin areas should be covered. Ensure that no spillage enters drains or water courses.

Flash point: Does not burn.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Auto ignition temperature: Not applicable - does not burn.

Flammability Class: Does not burn.

Fire decomposition products: from this product may form toxic mixtures in confined spaces. Likely to decompose only after heating to dryness followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water.

Section 6 - Accidental Release Measures

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment

MATERIAL SAFETY DATA SHEET

should comprise as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area, preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This material is classed as a S6 Poison. Observe appropriate state regulations for storage, transport and sale. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances listed under "Materials to avoid" below. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)	ADI (mg/Kg/day)	NOEL (mg/Kg/day)
	not set	not set	0.03	3.75

The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. A TWA has not been established by Worksafe Australia for any of the major ingredients in this product. There is a blanket limit of 10mg/m³ for dusts or mists when limits have not otherwise been established. The nature of this product makes it unlikely that this level will be approached in normal use. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2003.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Protective eyewear should be worn when using this product. Eye contact may prove painful and dangerous and should be avoided.

Skin Protection: Impermeable protective gloves should be worn when you are using this product, since absorption through the skin is harmful and failure to do so will lead to irritation of the skin. Clothing: Clean impermeable overalls or protective clothing should be worn, preferably with an apron. If contaminated, laundry should be advised of the nature of the contamination, or, preferably, clothing should be destroyed.

Protective Material Types: There is no specific recommendation for any particular protective material type. Consult AS2919 for advice on Industrial Clothing.

Respirator: It is advisable to wear a dust mask or respirator protection when using this product.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear light brown liquid
Odour:	Faint solvent odour
Boiling Point:	Approximately 100°C at 100kPa.
Freezing Point:	<-15°C
Flash Point:	Does not burn
Volatiles:	Water component.
Vapour Pressure:	Negligible
Vapour Density:	no data
Bulk Density:	
Water Solubility:	Completely soluble
pH:	7.1
Specific Gravity:	1.13
Auto ignition temp:	n/a
Corrosiveness:	Not corrosive.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles

Incompatibilities: Materials that react with water

Fire Decomposition: Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 - Toxicological Information

Inhalation: May irritate mucous membranes of nose and mouth.

Skin contact: Harmful if absorbed through skin.

Eye contact: Causes irreversible eye damage.

Ingestion: May be fatal if swallowed.

Animal Toxicity

Acute:

Oral toxicity LD₅₀ rat 99.5mg/kg (moderately toxic) (endothal dipotassium). Repeated dietary administration (via gelatin tablets) produced vomiting, diarrhea, sluggish movements, and liver, kidney and blood effects in dogs.

Dermal toxicity: LD₅₀ rabbit 2000mg/kg (slightly toxic) (endothal dipotassium)

Inhalation toxicity: LC₅₀ rat (4 hour): 0.83mg/L (aerosol) (endothal dipotassium)

Skin irritation: Not irritating - rabbit (endothal dipotassium)

Eye irritation: Causes irreversible eye damage in rabbits (endothal dipotassium)

Sensitisation: Skin allergy was observed in guinea pigs following repeated exposure.

Chronic:

Long term dietary administration to rats and mice produced effects in the glandular stomach. High mortality rates and intestinal tumours considered to be secondary to the effects in the stomach were observed in mice. Long term application to the skin of mice produced no tumours. No birth defects were observed in the offspring of rats exposed orally during pregnancy, even at dosages that produced adverse effects on the mothers. Skeletal anomalies were observed in the offspring of rabbits and mice exposed orally during pregnancy, but only at dosages that produced adverse effects in the mothers. No genetic changes were observed in tests using bacteria, animal cells or animals.

Section 12 - Ecological Information

Toxic to aquatic organisms and may cause adverse effects in the aquatic environment.

DO NOT contaminate streams, rivers or waterway with product or the used containers.

Aquatic Toxicity

Fish toxicity:

Endothal dipotassium:

LC₅₀ (96 h) bluegill sunfish (*Lepomis macrochirus*) 316-501.2mg/L; LC₅₀ (96 h) in trout (*Onchorhynchus mykiss*) 107-528.7mg/L; LC₅₀ (96 h) in largemouth bass 130mg/L

Aquatic invertebrate toxicity:

Daphnia LC₅₀ (48 h) 72-319.5mg/L; Fiddler crab LC₅₀ (48 h) 752.4mg/L Mysid shrimp LC₅₀ (48 h) 79mg/L

Freshwater diatoms LC₅₀ (48 h) >3.6mg/L Marine diatoms LC₅₀ (48 h) >9.0mg/L

Algal Toxicity:

Freshwater blue-green algae LC₅₀ (72 h) >4.8mg/L; Freshwater green algae LC₅₀ (72 h) >4.8mg/L

Terrestrial Toxicity

Bird toxicity:

8-day LC₅₀ bobwhite quail and mallard ducklings >5000mg/kg; 21-day LD₅₀ mallard duck 344mg/kg

Environmental fate, persistence and degradability, mobility Endothal dipotassium is rapidly degraded in the soil and water to CO₂ and non-toxic natural products.

Section 13 - Disposal Considerations

Disposal: Triple or preferable pressure rinse containers before disposal. Add rinsings to the mixing tank. Do not dispose of undiluted chemical on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Section 14 - Transport Information

ADG Code:

UN Number: 2902

Proper Shipping name: PESTICIDES, LIQUID, TOXIC, N.O.S.

Class and subsidiary risk: 6.1

Packing Group: III

EPG:

Hazchem code: 2X

This product is classed as UN2902, Dangerous Goods Class 6.1 Toxic Substances. Proper Shipping name is PESTICIDES, LIQUID, TOXIC, N.O.S. Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Poisonous Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Poisonous Substances are Fire Risk Substances), 8 (Corrosive Substances where the Poisonous Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Poisonous Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Poisonous Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Poisonous Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Poisonous Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

MATERIAL SAFETY DATA SHEET

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database. Endothal is mentioned in the SUSDP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
ASCC	National Occupational Health and Safety Commission
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [ASCC:2011(2003)]

© Envirogreen Pty Ltd June 2008